

ages pitchy, ventral spine slightly surpassing the posterior coxæ: less honey-yellow, tips of the tarsi piceous.

Length to tip of membrane 7 millim. Humeral breadth 4 millim.

*Hab.* Hong Kong, China.

The generic name *PACHYCEPHALUS*, page 225, is preoccupied and may be changed to *HYGIA*; the species will then be *HYGIA OPACA*.

The name *ANACANTHUS*, page 227, is also preoccupied; it may be changed to *ANACANTHOCORIS*.

### Descriptions of Nine New North American LIMNOBIACEÆ.

BY BARON R. OSTEN SACKEN.

Since the publication of my paper on the N. A. *Tipulidæ* with short palpi (in the Proceedings of the Academy for August, 1859,) my opportunities for collecting have been very limited, and in consequence of this, the number of new species discovered is not as large as I might have desired.

The following descriptions embrace five new species found by myself, two collected by Mr. Alex. Agassiz, in California, and two by Mr. Robt. Kennicott, in the northwestern parts of the possessions of the Hudson's Bay Company.

Several other new species in my collection I do not venture to describe, the number of specimens not being sufficient to establish the specific character. Among them, a *Dicranoptycha*, from California, deserves to be mentioned as a matter of geographical distribution.

I take occasion here to correct two errors which I discovered in the above mentioned paper.

First, That the measurement which I have used are *tenths of an inch*, and not *lines*. I called them lines, because the line used in Russia is equal to one-tenth of the Russian inch, which is the same as the inch used in England and America.

Second, That my *Limnophila pavonina* is the *Limnobia fascipennis* Say. I had failed for a long time to identify this species from Say's description, but am positive now about this synonymy.

#### DICRANOMYIA Steph.

D. IMMEMOR.—Silacea, thorace pleurisque vittis infuscatis, *alis* immaculatis, elongatis, *valde angustis*, areola discoidali aperta; long. 0.25—0.3.

Ochraceous, vertex infuscated, palpi and antennæ brownish, second joint of the latter stout; præscutum with three indistinct brown stripes; the intermediate darker towards the collar; pleuræ with a brown stripe extending from the base of the halteres, across the root of the wing towards the humeri; halteres pale, knob almost imperceptibly infuscated; tergum somewhat brownish; feet pale yellow, tip of tibiæ and the tarsi infuscated; wings very narrow, almost lanceolate, their basal, narrowed portion very long; anal angle small, hardly projecting; their color is subhyaline; stigma elongated, pale, its outline indistinct posteriorly; costal and subcostal veins yellow, the other veins brown; tip of the mediastinal vein a little beyond the origin of the petiole; stigmatal crossvein near the tip of the subcostal vein; radial area considerably longer than the cubital one; the latter longer than the subapical one; discoidal areolet wanting, the space usually occupied by it not being closed by a crossvein; this space is narrow and elongated; the fork, enclosing the second externomedial areolet is short and narrow; axillary vein somewhat undulated.

Numerous ♂ and ♀ specimens on a meadow near the Trenton Falls, N. Y., in September (nob.)

The general habits of this species is different from the other *Dicranomyia*; its very narrow wings with their yellow costal and subcostal veins, forming a contrast with the brown color of the other veins, make it easily recognizable. The structure of its male forceps belongs to the same type with those of the other species of the genus.

1861.]

*D. MARMORATA*.—Cinereo-fusca, thorace vittis tribus fuscis, alis cinereo nebulosis, stigmatibus quadrangularibus, fusco; long. 0.4.

Proboscis, palpi and antennæ brown; joints of the latter subglobular, verticils short; front and vertex cinereous, darker in the middle; thorax cinereous, with three brown stripes; abdomen brownish cinereous, posterior margins of the segments pale; halteres pale; feet yellowish, tips of femora, of the tibiæ and of the tarsi brown; wings subcinereous with some darker clouds and some hyaline bands and spots; a cloud at the origin of the petiole, another, round one, at the tip of the petiole; crossveins also clouded; stigma obscure-cinereous, elongated, quadrangular; the hyaline spots are arranged in the following way: a small rounded one in the anal angle; a band running across the basal portion of the præ-, pabrachial and anal areæ and ending in the axillary near the posterior margin; a spot in the anal area near the tip of the axillary vein; a large irregular hyaline space in the central portion of the wing, enclosing the stigma and the two clouds of the petiole, and extending more or less towards the posterior margin, across the discal and the externomedial areolets; its outline is very indefinite, and it is interrupted by clouded marks along the veins; a small hyaline mark at the tip of the wing, in the cubital vein. The tip of the mediastinal vein almost corresponds to the origin of the petiole; the mediastinal crossvein is a short distance before its tip; the discal areolet is present (closed) and the great crossvein corresponds to its base.

California, two ♂ specimens. (Mr. A. Agassiz). This species is related to *D. humidicola*, O. S.

#### LIMNOBIA nob.

*L. CALIFORNICA*.—Thorax vittis quatuor; alæ fuscæ, pallide fenestratæ, margine anteriore maculis quatuor fuscis; long. 0.7—0.8.

Front and vertex brown; underside of the head and sides of the occiput yellow; proboscis, palpi and antennæ brown; two basal joints of the latter yellow. Thorax yellowish, mixed with brown; præscutum with four brown stripes; the intermediate ones narrow, parallel; at their anterior end, they coalesce with the brown margin to the præscutum, which is broadest at the humeri; lateral stripes abbreviated anteriorly and extending over the scutum posteriorly; scutellum, metathorax and pleuræ more or less tinged with brownish; base and tip of halteres pale, the intermediate portion infuscated; femora brownish; a yellow ring before the tip, which is black; tibiæ ferruginous-brownish, brown at tip; tarsi ferruginous-brownish at the base, the remainder brown. Wings with a brownish tinge; four large brown spots along the anterior margin; the first at the basis of the præbrachial area; the second at the origin of the petiole, somewhat trapezoidal; both do not cross the subcostal vein, and do not therefore reach the anterior margin; the second is limited posteriorly by the præbrachial vein; the third spot is double, consisting of an oblique spot which begins at the margin, just beyond the tip of the mediastinal vein, and coalesces with a round spot at the tip of the petiole (origin of the fork); the fourth spot is at the tip of the subcostal vein; it is semi-oval and is enclosed between the costa and the radial vein; there are several subhyaline spots on the surface of the wing; a large angular one, beginning about the middle of the anal area and reaching the posterior margin at the tip of the axillary vein; smaller ones in the anal angle of the wing, at the tip of the anal vein; in the pabrachial area (near the great crossvein); in the discal areolet; at the tip of the wing, and on both sides of the fourth brown spot. A subhyaline longitudinal streak crosses the second brown spot in the præbrachial area, and the round spot at the tip of the petiole is encircled in pale. The mediastinal veinlet is almost in one line with the tip of the mediastinal vein.

California (Mr. Alex. Agassiz.) Single male.

This species belongs to the group of *L. cinctipes*, *solitaria* and *immatura*, and is most allied to the latter. Still it will be readily distinguished by its greater size, the coloring of the feet and the wings, etc.

[Sept.

*L. PARIETINA*.—Brunneo-flavescens; thorace vittis tribus fuscis, media capillari; alæ nebulis, strigis et maculis pallide fuscis; stigmatæ pallido, longo; *venula stigmatica* a *venarum mediastinalis et subcostalis terminibus æque distans*; long. 0.6—0.65.

Head, proboscis and palpi dark brown; antennæ pale, joints of the flagellum brown at the basis. Præscutum yellow, with three brown stripes; the intermediate is divided by a longitudinal, pale, sometimes hardly apparent line; the lateral ones are abbreviated before and extend over the scutum behind; scutellum and metathorax brownish; pleuræ brownish, mixed with yellow; halteres infuscated, whitish at tip; feet yellowish brown, a pale ring before the tip of femora; the latter pale; tarsi brown. Abdomen brownish; posterior margin of segments and a longitudinal stripe along the middle of the back, pale. Wings with clouds on all crossveins and with pale brown irregular spots in almost all the areæ; *in three or four of the apical areolets these spots assume the shape of an inverted V*. The stigma is very long, pale; the stigmatical crossvein is in the middle of the distance between the tips of the mediastinal and the subcostal vein; the mediastinal crossvein is close at the tip of the mediastinal vein.

The position of the stigmatical crossvein, and the very oblong stigma distinguish this species from all the others of the group. Its antennæ, especially in the living specimens, seems to be 15-jointed, the linear part of the 14th joint being unusually long; still, a careful examination convinced me that there was no articulation to separate this 15th joint.

Trenton Falls, on fences, in September, numerous ♂ and ♀ specimens, (nob).

*L. HUDSONICA*.—Thorax vittis quatuor, alæ fusco-maculatæ et nebulosæ; maculæ in margine anteriore obscure brunneæ, subopacæ; earum prima duplex; long. 0.5.

Head cinereous above, yellowish-ferruginous below; proboscis and palpi brown; antennæ brown; basal joints yellowish-ferruginous; præscutum with four brown stripes; intermediate ones separated by a yellowish line which is gradually widened anteriorly; halteres with a brown knob; feet (?); wings with brown spots and clouds; four deep brown spots along the anterior margin; the first is double, consisting of two spots, one at the base of the præbrachial area, the other immediately beyond it, connected together by the expansion of the first of them in the pobrachial area; the second spot, at the origin of the petiole, is trapezoidal, the oblique sides being slightly excised; the third, at the tip of the petiole, is oblique and double; the fourth, at the tip of the subcostal vein is rounded; the intervals between the three first of these spots are cloudless, whitish; the clouds on the remaining portion of the wing are exactly like those of *L. immatura*, only their color is more intense; an undulated one runs across the apical portion of the wing, and there are several along the posterior margin. The fork formed by the tip of the mediastinal vein with its crossvein, is like that of *L. solitaria*, that is, the upper branch is longer and oblique, the lower one being short and perpendicular.

Single female from the Slave Lake (Huds. Bay Terr.) by Mr. R. Kennicott.

The resemblance between this species and *L. immatura* is very striking; still they can be distinguished by some very reliable characters. The desire to prevent their confusion induced me to describe this new species, although I have but one imperfect specimen. The principal characters distinguishing them are—1st, the spot at the base of the præbrachial area is simple in *L. immatura*, whereas it is composed of two successive spots, connected as described above, in the other species; 2d, the structure of the mediastinal fork, and perhaps, 3d, the brown knob of the halteres in *L. hudsonica*, whereas in *L. immatura* the upper portion of this knob is pale. Besides, the spots of *L. hudsonica* are of a much more intense brown, contrasting with the pale space between them.

We have now five closely allied species within the genus *Limnobia* proper.

As they may be somewhat difficult to identify, the following tabular arrangement will clearly point out their differences.

Upper branch of the fork (formed by the tip of the mediastinal vein, with the mediastinal crossvein), longer, somewhat arcuated; the lower one short, perpendicular.

Two dark brown spots in the basal portion of the præbrachial area, connected together by the expansion of the first of them within the po-brachial area; tips of femora (?) *hudsonica*, O. S.

Brown spot at the basis of the præ- and pobrachial area pale and not distinct; a series of more or less numerous dots along the disc of the former area. Tips of femora brown, a pale ring before them. *solitaria*, O. S.

Branches of the fork of about equal length.

Surface of the wings brownish, with some pale marks (besides the usual four large brown spots along the anterior margin); tips of femora brown, with a pale ring before them. *californica*, O. S.

Tips of femora yellow, but with a brown ring close before them; wings with brown clouds and spots; an ocellated spot at the posterior end of the stigma. *cinctipes*, Say.

Lower branch of the fork longer, oblique, the upper one being perpendicular; wings marked like in *L. cinctipes*, but the brown spot at the posterior end of the stigma is not ocellated; tips of femora yellow, but with a brown ring close before them. *immatura*, O. S.

#### TRIMICRA nob.

Proboscis and palpi short. Antennæ of moderate length, 16-jointed; joints of the flagellum, especially the basal ones, subcylindrical, slightly incrassated at the base, with moderate verticils; *three apical joints of the ♂ very abruptly smaller than the preceding ones, subglobular*. Feet long, hairy, moderately stout; without spurs at the tip of the tibiæ. Ungues very small, smooth, *inserted under a projection of the last tarsal joint*. Pulvilli small, but distinct. Wings somewhat elongated, rather narrow; veins arranged more or less like *Limnophila*, or *Cladura*, but no petiolate areolet; petiole long, not arcuated at its origin, which is removed towards the basis of the wing; *mediastinal crossvein far removed from the tip of the mediastinal vein*, being more than twice nearer to the origin of the petiole than to that tip. Genitals of the ♂ apparently like *Limnophila* (I neglected to make a drawing of them from the living insect.)

The position of this genus in the group of the *Tipulæ eriopteraformes* is evident. It is easily distinguished by the three small-sized terminal joints of its ♂ antennæ. Still, as this character may be less distinctly seen in dry specimens, the position of its mediastinal veinlet, the absence of the petiolate areolet, the form of the petiole, which is not, or is almost imperceptibly, arcuated at its origin, and finally, the form of the male genital organs, will help to distinguish it from *Cladura*. It is allied to *Erioptera* on account of the situation of the mediastinal crossvein, but distinguished from it, besides the structure of the antennæ, by its glabrous wings only very slightly pubescent along the veins.

T. ANOMALA.—Fusco-cinerea, annis nigris, thorace vittis tribus fuscis, femoribus apice infuscatis; alis immaculatis, modice brunnescentibus; long. 0.3—0.35.

Brownish cinereous; front with a brown line in the middle; antennæ and palpi blackish-brown; præscutum infuscated in the middle, with three dark brown lines, the intermediate one especially distinct; the lateral ones extended over the scutum; scutellum paler; metathorax and pleuræ somewhat hoary; halteres pale, a little infuscated at the basis of the knob; feet hairy, brownish yellow, tip of femora broadly, tip of tibiæ slightly infuscated; tarsi brown, paler at base. Tergum brown, hairy, sides and forceps of the ♂ paler. Wings

[Sept.



immaculate, slightly tinged with brownish; stigmatal crossveins and the other central crossveins with a slight brown nebula; veins minutely pubescent towards the tip; the stigmatal crossvein starts from the upper branch of the radial vein, immediately beyond the origin of the second radial area; the latter is a little shorter than the cubital area; the subapical area almost of the same length with the preceding one; discoidal areolet narrowed anteriorly, like a truncated triangle; the great crossvein a little anterior to the discoidal areolet.

Washington, D. C., autumn, 1860.

Compared a ♂ and a ♀ specimen; the discoidal areolet of the right wing of the ♂ is abnormally formed, its second lower discal crossvein being removed towards the basis of the areolet, in such a way that the first and second externomedial veins form a petiolate areolet, and the discoidal areolet is very much shortened.

#### CLADURA O. S.

C. INDIVISA.—Flavo-ferruginea; pleuræ punctis, abdomen fasciis brunneis; alæ subflavescentes; *area cubitali integra* (venula transversa non instructa); long. 0.28—0.3.

Similar in all respects to *C. flavoferruginea*, only the transverse vein in the cubital area is wanting; crossveins and origin of petiole but indistinctly clouded; the size is variable, but generally smaller than in the other species.

When I described *C. flavoferruginea*, I had several specimens of this new species before me, all from Massachusetts. Although the absence of the crossvein in all these specimens was a very striking character; I did not choose at that time, without further proof, to consider them as a different species. Since then I caught numerous specimens at the Trenton Falls, in September, 1860, all partaking of the same character, which removes all doubt as to their specific diversity. Some of these specimens, probably recently excluded, were very pale and altogether without spots.

Mass. (Mr. Scudder); Trenton Falls (nob.)

#### AMALOPIS Halid.

A. VERNALIS.—Fusco-cinerea, thorace vittis tribus fuscis, media cuneiformi, capillari; alæ maculis 5 vel 6 in margine anteriore; long. 0.3—0.4.

Head brownish-cinereous, front infuscated in the middle, palpi at the tip; antennæ 16-jointed, not much longer than the head; basal joint yellowish, flagellum brown, verticils very short. Præscutum yellowish-cinereous with three stripes; the intermediate one broad, cuneiform, with a pale line in the middle (capillary); lateral ones abbreviated anteriorly; scutum infuscated in the middle; scutellum, metathorax and pleuræ cinereous; the latter somewhat hoary; halteres pale yellowish; feet brownish, base of femora pale. Abdomen brown, posterior margin of the segments pale; ♀ ovipositor ferruginous. Wings somewhat infuscated with five brown spots along the anterior margin; the first at the mediastinal crossvein, the second at the origin of the petiole, the third, fourth and fifth at the tip of the mediastinal, subcostal and radial veins; a sixth spot is at the tip of the petiole; besides these spots, all the crossveins and tips of the longitudinal veins are more or less clouded; the male especially has some indistinct clouds on the apical portion of the wing, along the veins; petiolate areolet extant.

Washington, D. C., two specimens (♂ ♀) in April (nob.)

This species shares all the characters of *Amalopsis*; the palpi, however, seem to be somewhat shorter than in the other species of this genus. The structure of the discoidal areolet is very peculiar; the obliquity of the second lower discal crossvein, common to all species of the genus, is carried so far here, that this crossvein assumes an altogether longitudinal direction, and thus ceases to be a crossvein, becoming a mere prolongation of the second externomedial vein. In consequence of this, the following changes take place in the neurulation of that part of the wing: the discal areolet is narrow, parallel, and *has but a single*

1861.]

*lower crossvein*; the third externomedial areolet is unusually long, its basis being on the same line with the bases of the discal and of the fourth externomedial areolets; the third externomedial vein, instead of issuing from the discal areolet, runs parallel to it and becomes a mere prolongation of the præbrachial vein. Other peculiarities of the neururation are, that the *cubital vein forks* and not the radial one (at least such is the case in both of my specimens), that the stigmatal crossvein is close at the tip of the subcostal vein, and that there is a stump of a vein near the origin of the petiole. The ♂ genital organs seem to be analogous to those of *Pedicia*. The spurs at the tip of the tibiæ of this species are very small, almost imperceptible.

A. HYPERBOREA.—Fusca, alis fusco maculatis, *area pobrachiali media venula transversali instructa*; long. 0.45.

Very like the preceding, but easily distinguished by the coloring of the wings, *by the presence of a supplementary crossvein* about the middle of the pobrachial area, and by the oblique direction of the second lower discal crossvein (similar in this respect to all the other species of *Amalopsis*).

The only specimen which I possess is spoiled by mould, so that my description will necessarily be incomplete.

Body brownish, antennæ brown, feet brownish, base of femora paler, tip of tarsi dark brown. Wings with a slight brownish yellow tinge, and with brown spots at the tips of nearly all the veins, as well as at their anastomoses. There are seven such spots along the anterior margin (one at the humeral crossvein, another a little beyond it, a third at the mediastinal crossvein, a large spot at the origin of the petiole, extending to the anterior margin, the following three at the tips of the mediastinal-subcostal and radial veins); similar, but smaller spots at the tips of the veins of the posterior margin (beginning with the first externomedial); other spots at the base of the pobrachial area, in the middle of the subaxillary area (at the posterior margin), at the basis of the petiolate areolet, of the area formed by the fork of the cubital vein, and a square cloud in the middle of that area; crossveins also clouded.

The petiolate areolet is present; the stigmatal crossvein is near the tip of the subcostal vein, and there is a stump of a vein near the origin of the petiole.

Labrador; single ♂ specimen.

### Contributions to the Ophiology of Lower California, Mexico and Central America.

BY E. D. COPE.

#### VIPERIDÆ.

*Caudisona durissa* Laur. Cope, Smithsonian Contributions, v. xii. Researches on the venom of the Rattlesnake, by S. W. Mitchell, M. D., p. 120.

A male specimen of this serpent (No. 4945) has been sent by Capt. J. M. Dow, from La Union, San Salvador, to the Smithsonian Institution (No. 4945). It is identical with specimens from Surinam in Mus. Academy, exhibiting similar muzzle plates, head and neck stripes, and the isolated black dorsal rhombs upon a yellow ground, with yellow centres. The crepitacula of this species and the *C. terrifica* are much shorter and more compressed than in *C. atrox* and *C. horrida*.

*Caudisona atrox sonoraensis* Kenn. Proc. Acad. Nat. Sci. Phila. 1861, p.

Specimens sent from Cape St. Lucas, Lower California, to the Smithsonian Inst. and Phila. Academy, by Mr. John Xantus, are more delicately tinted than Sonora specimens. The dorsal rhombs are more perfect, their yellow borders brighter, and their centres paler and similar in color to the lateral interspaces. The scales but little roughened.

[Sept.